ARTICLE

Knowledge, attitudes and practices of women regarding the prevention of mother-to-child transmission (PMTCT) programme at the Vanguard Community Health Centre, Western Cape – a pilot study

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Objective. The aim of the study was to determine the knowledge, attitudes and practices of women regarding the prevention of mother-to-child transmission (PMTCT) programme at a community health centre (CHC).

Method. A descriptive study was conducted using an administered, structured questionnaire.

Subjects and setting. Thirty-six educated women aged 18 - 39 years and attending the clinic took part. Participants were from informal settlements and mostly unemployed, receiving government grants.

Results. The majority (88.9%) scored 80% or more with regard to general HIV knowledge. Although the majority (78%) were formula feeding, primarily owing to their HIV status and convenience while working, 24% would not be able to sustain this feeding method after the initial 6 months' free supply provided by the provincial health services. The majority could not define the terms exclusive breastfeeding (89%), mixed feeding (81%) or cup feeding (94%) correctly. Attitudes were found to be positive with regard to both breastfeeding and formula feeding, but HIV status influenced it significantly ($p < 0.1$).

Conclusion. In conclusion, certain aspects of the PMTCT programme appear to have been effective at the CHC included in this study. The women were knowledgeable about HIV transmission and mother-to-child transmission (MTCT), but they were uninformed about certain essential aspects, i.e. prevention, cure and infant feeding. Attitudes were similar towards breastmilk or formula milk as a feeding choice but were influenced by HIV status. It was indicated that an informed decision-making process was not followed, rather that the women were advised to formula feed. Sustainability of formula feeding after 6 months and training of health workers specifically regarding feeding options need to be addressed.

In 2005, around 2.8 million men, women and children lost their lives to acquired immune deficiency syndrome (AIDS)-related diseases. Many more – 38.6 million – are living with HIV, and most of these are likely to die over the next decade. The most recent UNAIDS/WHO estimates show that, in 2005 alone, 4.1 million people worldwide were newly infected with HIV.[1] The 2005 National HIV Survey estimated that 10.8% of all South Africans more than 2 years of age were living with HIV. The highest prevalence, 16.2%, was found among those between 15 and 49 years old.[2]

HIV can be transmitted through body fluids as in sexual contact, intravenous drug abuse, direct blood contamination[3] and mother-to-child transmission (MTCT) during pregnancy, labour and breastfeeding.[4]

Of all South African women attending antenatal clinics during 2005, 30.2% were living with HIV.[2] The transmission of HIV from mother to infant is referred to as MTCT,[4] which is the cause of more than 90% of HIV infections worldwide among children.[5,6] Without intervention, 25 - 40% of mothers will transmit HIV to their infants during pregnancy and breastfeeding.[7]

Throughout pregnancy the risk of infection is 5 - 10%, whereas the risk increases to 10 - 20% during delivery and 5 - 15% during breastfeeding.[5]

Programmes aimed at PMTCT can play an essential role in reducing the risk of transmission, as well as slowing the spread of the disease. Intervention programmes in Africa have successfully reduced MTCT to approximately 12%.[7] In developed countries, counselling, testing and antiretroviral (ARV) therapy, linked with comprehensive antenatal and intrapartum care and effective promotion of formula feeding, have led to a reduction of MTCT rates to below 5%.[7]

Exclusive breastfeeding (giving a child no other food or drink, including no water, in addition to breastfeeding with the exception of medicines, vitamin drops or syrups, and mineral supplements[8]) may significantly lower the risk of MTCT compared with mixed feeding (feeding both breastmilk and other foods or liquids, and a term widely used in the MTCT literature – an infant who is either predominantly or partially breastfed is considered to be receiving mixed feeding[8]), which affects the integrity of the infant's gut mucosal lining.[9] Women need to have sufficient knowledge of HIV transmission and correct feeding practices to enable them to make an informed decision, thereby reducing the risk of MTCT.

The woman must decide on her feeding choice during pregnancy. By not breastfeeding, one can reduce the risk of MTCT by 5 - 15%. In some situations, when milk is incorrectly and unhygienically prepared,[10] the risk of formula feeding is greater than the risk of breastfeeding owing to diarrhoea and infections other than HIV that may occur.

When deciding on feeding choice, the availability of safe water, sanitation and income play an essential role due to the risk of contamination of the formula milk, which would increase morbidity and mortality.[3,4]

Health workers can influence the woman's decision and are therefore vital in MTCT prevention and the success of the programmes.[11] Women need to be educated and informed so an informed choice on infant feeding can be made.

The aim of this study was to determine the knowledge, attitudes and practices of women regarding the PMTCT Programme at Vanguard Community Health Centre, where the programme has been implemented since 2002.

Methodology

Study population

The study was conducted at Vanguard Community Health Centre (CHC), near Cape Town, South Africa, in January 2004. Data were collected over a 4-week period by the investigators. Inclusion criteria included all HIV-infected women (15 - 49 years), attending the Vanguard CHC antenatal clinic and on the PMTCT programme.* Participants were required to give informed consent and were English, Afrikaans or Xhosa speaking. The projected sample size was 60 - 80 participants as per the PMTCT register at the CHC.

Data collection

A questionnaire was developed in English in consultation with an educational expert and translated into Afrikaans. Comments regarding the content validity of the questionnaire were requested from those within the division with the most expertise regarding the PMTCT programme. Face validity was tested during a pilot study at Bishop Lavis CHC. As the population is predominantly Afrikaans-speaking, it was only possible to pilot the Afrikaans questionnaire. The questionnaire included sections on socio-demographic data (20 closed questions regarding employment, income, age, marital status, dependants, literacy, education level, housing and availability of water and sanitation), knowledge (14 closed and open-ended questions regarding transmission, risks, causes and cure of HIV as well as definitions for infant feeding practices and nutritional advice), attitudes (14 statements regarding breastfeeding and formula feeding with a 4-point Likert scale ranging from strongly agree, agree, disagree to strongly disagree), and feeding practices (25 open and closed-ended questions regarding support, choice of feeding methods, sustainability of formula feeding for all women and hygiene and current feeding practices for post-partum women only). To get an indication of honesty in answering, the final question in the questionnaire asked the women whether they guessed any of the answers and if so, whether it was more or less than half of the answers. The questionnaire was completed during a structured interview to ensure that illiterate clients were not excluded. The investigators, 3 BSc Dietetics final-year students (researchers of the study) and the Xhosa translator (nutrition advisor at Vanguard CHC), were standardised in terms of explanations given and interviews conducted using the questionnaire.

Permission was obtained from the Department of Health, the Provincial Government of the Western Cape and the Facility Manager of the Vanguard CHC. Ethics approval was obtained from the Head of Division: Human Nutrition as mandated and ratified by the Human Research Committee of the Faculty of Health Sciences, Stellenbosch University.

* In 1999 the SA PMTCT programme was implemented where all pregnant women presenting at public hospitals and clinics are entitled to voluntary confidential HIV counselling and testing. If tested HIV positive, they are entitled to receive free ARVs as well as free infant formula for the first 6 months of the infant's life if the mother chooses not to breastfeed.[4]

Statistical analysis

As questions were categorical, the means and standard deviations could not be determined for most of the variables. Frequencies of categories were determined and represented in tables or graphs as appropriate. Knowledge scores were determined using only the closed-ended questions regarding HIV transmission and infant feeding, with a maximum score of 10. Means and standard deviations were determined for these knowledge scores. The data were analysed using Microsoft Excel and manual calculations were used for the contingency tables and Pearson chi-square testing for independent variables. As the sample size was small, an alpha-level of 0.1 was deemed to have sufficient statistical power to determine statistically significant differences between correlations.

Results

All 36 women who met the inclusion criteria were included in the study. Interviews were conducted in English, Afrikaans or Xhosa. Twenty (55.6%) of the women were less than 6 months post-partum and 16 (44.4%) were pregnant. Questions concerning hygiene and current infant feeding practices were not answered by the pregnant participants. Participants were aged between 18 and 39 years, 11 (30.6%) were younger than 25 years, 8 (22.2%) were between 25 and 29 years and 17 (47.2%) were older than 30 years.

Twenty-three of the women (63.9%) were unemployed; of those, 8 (34.8%) were supported by their partner and 7 (30.4%) received government grants. Sixteen of the women (44.4%) had dependants and 18 (50%) of the women had an income of less than R500 per month. Thirty-four of the women (94.4%) reported that they could read and write, indicating literacy (general literacy and not language-specific literacy was assessed) and 17 of the women (47.2%) had an education level between Grades 11 and 12. Three (8.3%) participants reported no education and 3 (8.3%) reported tertiary education.

Twenty (55.6%) of the women reported living in informal settlements, 8 (22.2%) reported living in structured brick houses, 4 (11.1%) reported staying in a Wendy house/prefabricated building, 1 (2.8%) in a flat and the remainder (3) in other accommodation.

With regard to sanitation, 25 (69.4%) reported having an outside toilet, of which 23 (63.9%) were flush toilets. Fifteen (41.6%) reported having running tap water inside their house. At least once a week, 33 (91.7%) of the women had their waste removed. The most commonly reported energy sources for cooking were electricity (66.7%) and paraffin (38.9%).

Twenty-five of the women (69.4%) indicated that they did not guess any of the answers, whereas 7 (19.4%) reported guessing less than half the answers, and only 4 (11.1%) indicated that they guessed more than half of the answers.

Knowledge

A knowledge score of at least 50% (5 out of a maximum of 10) was obtained by all the women regarding knowledge of HIV transmission (Table I) with the mean score being 9/10 (SD 1.37). Thirty-two of the women (88.9%) scored at least 80%. Using the chi-square test, there was a statistically significant positive relationship between the education level (higher than grade 10) of the participants and the knowledge scores ($p < 0.1$[†]).

Table I. HIV/AIDS knowledge score distribution of the women

Score (10 max.)	No. of participants (N = 36)	Distribution (%)
10	17	47.2
9	11	30.6
8	4	11.1
7	1	2.8
6	1	2.8
5	2	5.6

Regarding specific questions, 33 of the women (91.7%) answered correctly that HIV causes AIDS and only 3 (8.3%) indicated that they were unsure. Eleven of the women (30.6%) reported that HIV/AIDS is curable, 15 (41.6%) that it was not curable and 10 of the women (27.8%) that they were unsure. Thirty-two of the women (88.9%) reported that MTCT is preventable, only 1 (2.8%) reported that it was not preventable, and 3 (8.3%) were not sure. The most common answers provided to the open-ended question regarding how MTCT could be prevented, were the exclusion of breastmilk in 11 of the women (30.6%) and the use of ARV drugs in 26 (72.2%).

Only 4 of the women (11.1%) explained the term exclusive breastfeeding correctly, and 18 (50%) indicated that they did know what exclusive breastfeeding meant and did not attempt an explanation (Fig. 1). Of the 14 who explained the term incorrectly, 6 (16.7%) erroneously thought that it meant not to breastfeed at all. Twenty of the women (55.6%) could not explain the term mixed feeding correctly and only 7 (19.4%) explained the term correctly. Only 2 of the women (5.6%) correctly explained the term cup-feeding, whereas 11 (30.6%) explained it incorrectly.

Attitudes

Thirty-five of the women agreed (10 strongly agreed and 25 agreed) that they were satisfied with health

[†] As a result of the small sample group, an alpha-level of 0.1 was used to determine if there was a statistically significant difference between correlations.

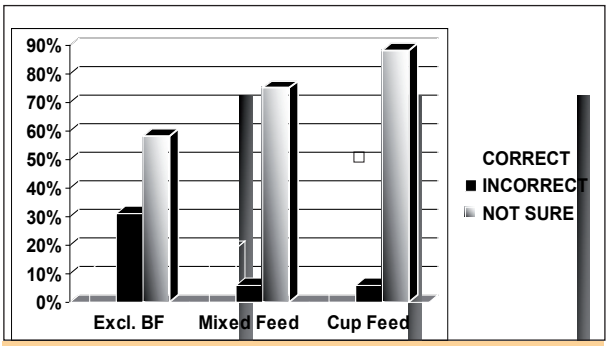

Fig. 1. Explanation of feeding practice terminology by mothers (N = 36).

worker advice about PMTCT. In a closed-ended question, 32 of the women (88.9%) reported that they preferred to follow a health worker's advice compared to advice from family (5.6%), friends (2.8%) or a partner (2.8%). Twenty-three of the women (63.9%) disagreed (6 strongly disagreed and 17 disagreed) that they were happy/would like to breastfeed their infant. More than half of the participants (64.5%) reported that they felt they made the best feeding choice, and 20 (55.6%) were happy about their choice.

Table II indicates the strength of agreement or disagreement with the statements as indicated by the Likert scale regarding breastfeeding and formula feeding. Twenty-eight (77.8%) of the women agreed that breastfeeding and formula feeding is healthy, 28 (77.8%) agreed that breastfeeding is nutritionally complete and 26 (72.2%) that formula feeding is nutritionally complete. Twenty-nine of the women (80.6%) agreed that breastfeeding satisfied their infant, whereas 31 (86.1%) agreed that formula feeding satisfied their infant. Regarding hygiene of feeding methods, 32 (88.9%) of the women agreed that breastfeeding was hygienic and 29 (80.6%) indicated the same about formula feeding.

Contingency tables were drawn up to compare women that gave all correct responses regarding MTCT and all four aspects of attitude towards formula and breastfeeding respectively. The Pearson chi-square test indicated that there was no statistically significant relationship ($p > 0.1$) found between MTCT knowledge and attitude towards formula feeding but a statistically significant relationship ($p < 0.1$) between MTCT knowledge and attitude towards breastfeeding.

Practices

It should be noted that the scope of this study did not determine whether the participants actually practised what they reported doing.

Feeding choice

Twenty-three of the women (63.9%) responded that they had received information on infant feeding practices and nearly all of those women (22; 95.7%) had received such information from a health worker. Twenty-three (63.9%) reported that the health workers advised them to formula feed.

In an open-ended question regarding the reason for choosing a specific infant feeding method, the most

Table II. Attitudes of women towards breastfeeding and formula feeding (*N* = 36)

	Breastfeeding (*N* = 36)	%	Formula feeding (*N* = 36)	%
Healthy				
Strongly agree	9	25	5	13.9
Agree	19	52.8	23	63.9
Disagree	8	22.2	8	22.2
Strongly disagree	0	0	0	0
Nutritionally complete				
Strongly agree	8	22.2	6	16.7
Agree	20	55.6	20	55.6
Disagree	7	19.4	10	27.8
Strongly disagree	1	2.8	0	0
Satisfies infant				
Strongly agree	8	22.2	6	16.7
Agree	21	58.3	25	69.4
Disagree	7	19.4	5	13.9
Strongly disagree	0	0	0	0
Hygienic				
Strongly agree	10	27.8	6	16.7
Agree	22	61.1	23	63.9
Disagree	4	11.1	7	19.4
Strongly disagree	0	0	0	0

common reason stated was to protect their infant from contracting the virus (27 of 36, 75%). Other reasons stated included: going back to work (8.3%), advice from a counsellor at the clinic (2.8%), medical reasons preventing breastfeeding (2.8%), preferring not to breastfeed (2.8%) and because the formula was free (2.8%). The fact that the formula milk was free of charge would have reportedly influenced 8 (22.2%) of the participants in their decision regarding feeding options. Furthermore, 8 (22.2%) of the participants indicated that they felt they would be unable to financially continue feeding their child infant formula after the 6 months of free formula from the clinic.

Twenty participants were post-partum and 16 were pregnant. Post-partum women only were required to indicate factors influencing their current feeding choice. Fourteen (70%) of the post-partum participants reported being influenced in their decision; 12 of them reported being influenced by a health worker, and 2 by their partners. The women reported that their family supported (23 of 36, 63.8%) and approved (17 of 36, 47.2%) their feeding choice.

Feeding practices

These results were obtained from post-partum women only (N = 20). Only 1 participant (5%) reported that she exclusively breastfed her infant because she believes that it is the best method of feeding. Nineteen (95%) participants reported that they formula fed their infants. Cow's milk, evaporated milk, sweetened condensed milk, tea, fruit juice, infant porridge and water were the breastmilk substitutes (BMS) other than formula milk that were reportedly provided to the children. None of the participants gave cow's milk, evaporated milk or sweetened condensed milk before 12 months of age. Two (10%) participants gave tea between 3 and 6 months, 4 (20%) gave fruit juice before 6 months of age, 5 (25%) gave porridge before 3 months, and 3 (15%) gave porridge between 3 and 6 months. Regarding water, 9 (45%) participants gave water before 3 months and 4 (20%) between 3 and 6 months (Fig. 2).

Cup-feeding was uncommon, with only 5 women (25%) reporting that they cup-fed, and this was strengthened

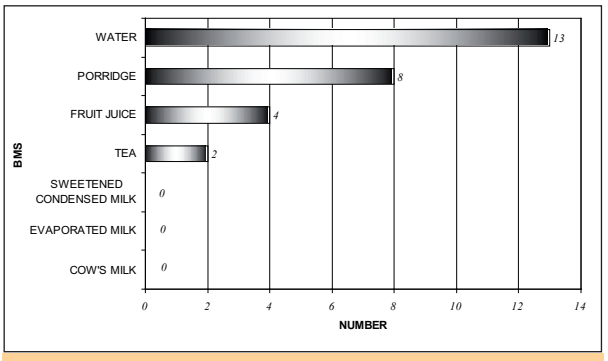

Fig. 2. Breastmilk substitutes (BMS) given to children before the age of 6 months (N = *20).*

by the fact that when all of the women (N = 36) were asked which feeding method they thought was better for their baby, cup or bottle-feeding, 30 (83.3%) indicated that bottle-feeding was better.

With the 19 women already formula feeding, all reported washing bottles and teats every time before feeding the infant; 10 (52.6%) used boiling or hot water with soap or a steriliser, 7 (36.8%) used only boiling water and 2 (10.5%) used cold water and soap to clean the bottles and teats. Thirteen (68.4%) correctly explained the preparation of infant formula.

No participants reported that they had changed their feeding practices when friends and relatives came to visit.

Discussion

The sample of women all fell within the age range of those with the highest prevalence of HIV, namely 15 - 49 years.[2] Two-thirds of the women were unemployed and mostly supported by partners or government grants. Half of the women had an income of less than R500 per month, indicating poor financial conditions and that they may have been financially unable to sustain this option once the first 6 months' supply of free formula milk had finished. Housing conditions were poor in most cases with only 22% living in structured brick houses. More than half of the women only had access to running water outside of their home and most had an outside flush toilet. Waste was removed regularly in the majority of cases and two-thirds used electricity for cooking. Education levels were good, with at least half having an education level of grade 11 or higher and less than 10% reporting no education. Although the majority of women indicated that they could read and write, the two who could not are a cause of concern, as the accuracy of preparation and amounts of formula given to the infant would be questionable, and could result in the infant receiving inadequate nutrition. It is well known that hygiene, sanitation and income play a very important role in whether formula feeding should be considered as a feeding option. Contaminated water, bottles and mixing utensils can lead to pathogenic infections of the infant which increases morbidity and mortality rate due to dehydration and diarrhoea.[3,4] In lower socio-economic areas, the cost implications and sustainability of buying formula milk impacts on the decision regarding the feeding option, indicating that formula milk should be avoided.[12] Owing to the limiting factors that were present in this sample, such as unemployment, poverty, unreliable water sources and poor housing, the decision to formula feed may not have been in the best interests of these infants.

A factor that could impact on the results was that although two-thirds of the women reported not

guessing any answers, the majority of those guessing reported guessing less than half and only 4 of the mothers reported guessing more than half of the answers. On further investigation, the knowledge scores regarding HIV transmission indicate a range of scores, indicating that this may not have skewed the results.

The knowledge of HIV transmission and MTCT was close to 100%, with the majority of women scoring at least 80%. This could be expected as they had received counselling[‡] and the scores were positively associated with their high level of education.

The women generally knew that HIV causes AIDS, but it is of concern that almost a third believed that HIV/AIDS is curable and almost another third were unsure. ARV drugs and to a lesser extent exclusion of breastfeeding were the most common responses for the prevention of the transmission of the virus. The literature indicates that the best way to prevent MTCT is to prevent the infection of girls and women of childbearing age. Education about safer sex, use of condoms and diagnosis and treatment of sexually transmitted infections should be provided. Ensuring the safety of medical procedures, such as labour and blood transfusion, and universal safety precautions also play a role in primary prevention.[3,5,13] The effectiveness of ARV therapy in PMTCT has been shown during pregnancy, if provided intravenously during labour and if provided to the infant for 6 weeks after delivery,[3,5] but it has not yet been proven during lactation.[13] The use of ARV therapy, however, can lead to many ethical and practical problems. The literature is also conflicting regarding breastfeeding and MTCT, indicating an increased risk of transmission with breastfeeding compared with formula feeding in some studies,[16-20] whereas others have shown no additional risk of breast-feeding.[9,20,21] Exclusive breastfeeding has been shown to lower the risk significantly compared with mixed feeding which affects the integrity of the infant's gut mucosal lining.[22]

Terms that are supposed to be used in counselling about infant feeding options to enable the mother to make an informed decision,[14] i.e. exclusive breastfeeding, mixed feeding and cup feeding, were not defined correctly by the majority of women, indicating that in the PMTCT programme not enough emphasis or reinforcement is placed on the different feeding options available. The crucial message of the PMTCT programme is that whichever feeding option is chosen, it should be implemented exclusively.[4]

The women seemed positive about the health workers' advice and they preferred to follow their advice compared with that of family and friends, which indicates the important role of the health workers and the major impact that they could have on the women's decisions.[23] Less than two-thirds of women reported receiving information from a health worker regarding feeding practices although, as previously mentioned, this is supposed to be part of the PMTCT programme. Although the mother is meant to make an informed decision herself, almost two-thirds of women in this sample reported that the health worker had advised them to formula feed. It must be noted though that three-quarters of the women stated that their reason for choosing formula feeding was to prevent MTCT, which may indicate that their perception that the health worker advised them may actually have been part of their informed decision making process. A concurrent study[11] also reported that health workers influenced 80% of women in their feeding choice. It shows the importance of health workers remaining objective and providing all the necessary information when counselling patients, so that women are enabled to make informed choices.

Participants' attitude towards breastfeeding and formula feeding did not differ between the health, nutritional value, satisfaction level and hygiene of both feeding options. Although not statistically significant, when the difference of responses in percentages is compared, more women felt that breastfeeding was more nutritionally complete (5.6%) and hygienic (8.3%), whereas more women felt that formula feeding was more satisfying to the infant (5.5%) than breastfeeding. This perception has been reported in the literature.[24] The statistically significant relationship found between MTCT knowledge and attitude towards breastfeeding indicates that they appropriately based their preference for formula feeding on the risk of MTCT associated with breastfeeding.

The participants showed a positive attitude towards breastfeeding, but owing to their HIV status felt that it was too much of a risk and not the best feeding option for them. Most women indicated that they were satisfied with their decision to formula feed and had made the best feeding choice under the circumstances. Only 1 woman indicated that receiving free formula was her motivation for her feeding option, but 8 indicated that it did influence their decision. These women also reported that they would be unable to sustain the formula feeding option after the free supply ended. Davis *et al.*[11] similarly reported that 24% of the participants in that study chose formula feeding because it was free. The question therefore arises whether had infant formula not been provided free, would more participants have chosen to breastfeed?

Only 1 mother reported deciding to exclusively breastfeed her infant. Mixed feeding was reported, providing other fluids and porridge before the recommendation of 6 months. This is not advised

[‡] PMTCT programme involves four stages of counselling in relation to HIV,[14] i.e. stage 1 specifically involves pre-test counselling where the risk to exposure of HIV, implications of knowing one's HIV status and voluntary counselling and testing are discussed and stage 2 is the post-test counselling to discuss the woman's concerns regarding her status and provide information, support and referral to other services that she may need.

due to the infant's physiological incapacity to handle certain food types and the fact that these foods may replace the essential breastmilk or formula milk[10] as well as affecting the integrity of the infant's gut mucosal lining.[9]

Although evidence exists that cup-feeding is more hygienic[12] and is meant to be part of the infant feeding counselling of the PMTCT programme, participants did not seem to practise cup-feeding. The fact that very few participants could correctly define the term cup-feeding may contribute to this finding, i.e. ignorance regarding this method existed as they were uninformed or did not comprehend during counselling and training.

The participants reported cleaning the bottles and teats before use and preparing the formula correctly, showing that participants have the necessary knowledge to correctly and hygienically prepare the formula milk. Although not part of this study, contamination from using poor water sources may influence the hygienic preparation of the formula, thereby increasing morbidity and mortality.

The literature indicates that the more culturally acceptable a certain way of feeding is, the more likely it is that such methods will be used[4] and that a person's culture affects his/her attitude and beliefs and largely influences decision-making.[9] HIV status seemed to influence the limited practice of breastfeeding in the sample, even though their attitude towards breastmilk was positive. This indicates that the participants would rather minimise the risk of MTCT than conform to culturally acceptable practices. Davis *et al.*[11] also support this finding. Even though families did not always approve of the women's chosen feeding option, they nevertheless supported the decision made. Of those using infant formula, all reported to continue with the chosen feeding method when family and friends came to visit.

Conclusions

It was found that despite the high rate of unemployment, poverty, unreliable water sources and poor housing as well as the women's inability to sustain formula feeding after the completion of the programme, they nevertheless decided to formula feed. It was again shown that health workers play an essential role in the success and effectiveness of the PMTCT programme. The health worker's advice was sought but the information that was provided was not conducive to an informed choice because the women were advised to formula feed. Although the women were knowledgeable about HIV transmission and MTCT, as well as hygiene and preparation of feeds, they were uninformed regarding prevention and cure of HIV/AIDS and the essential aspects of infant feeding such as exclusivity (not mixed feeding) and method of feeding, as demonstrated by the fact that mixed feeding and bottle rather than cup-feeding was practised. The women's decision to formula feed seems to have been influenced by their HIV status and in some cases the free supply of formula milk rather than for its superiority over breast milk (nutritional value, hygiene and health). The perception seems to exist, however, that formula feeding is more satisfying for the infant. Culture, stigma and community influence did not seem to affect their decision-making or practices.

Recommendations

In order to increase the sample size, it is recommended that the study be repeated for a longer duration and at a different time of the year, as many of the potential participants received 2 months' supply of infant formula in December and did not attend the clinic in January. PMTCT programme counsellors should be continually trained and retrained to provide accurate information objectively. There should be more emphasis on explaining the differences between exclusive breastfeeding and mixed feeding and the subsequent consequences of inaccurate practices, and cup-feeding should be emphasised. Socio-economic factors, specifically regarding income and hygiene, should be assessed more stringently to support the decision-making process.

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